AMENDMENTS TO THE CLAIMS

Claims 1-21 (Cancelled)

22. (Previously Presented) A continuous process for producing polyamides, their oligomers, or mixtures thereof, and optionally further reaction products, comprising

reacting

(A) aminonitriles or dinitriles and diamines or mixtures thereof, optionally together with further polyamide-forming monomers and/or oligomers,

with

(B) an aqueous medium composed of aqueous monomer and oligomer extracts obtained from polyamide production by extraction of the polymer with water,

in a reactor which has a vertical longitudinal axis and through which there is a flow substantially in the longitudinal direction,

wherein

said aqueous medium (i) has a solids content in the range of from 2 % to 30 % by weight and (ii) is introduced into the reactor at a first location and one or more additional locations along the vertical longitudinal axis,

wherein

said one or more additional locations are located at least 1 meter higher on said reactor than said first location,

from 35 % to 95 % by weight of the total amount of said aqueous medium is introduced into said reactor at said first location or at one of said one or more additional locations, and

the temperature of the aqueous medium introduced at said one or more additional locations is lower than that of the aqueous medium introduced at said first location.

23. (Previously Presented) The process of claim 22, wherein said aqueous medium is introduced into said reactor at three or more different locations along said vertical longitudinal axis.

24. (Previously Presented) The process of claim 22, wherein said reactor is a flow tube, a TVA reactor, a multichamber reactor operated co- or countercurrently, or a reactive or nonreactive distillation apparatus.

25. (Previously Presented) The process of claim 24, wherein said reactor is a multichamber reactor or a flow tube which is fed with aminonitriles or dinitriles and diamines or mixtures thereof, optionally together with further polyamide-forming monomers and/or oligomers and a first portion of said aqueous medium at one end and with further portions of the aqueous medium being added in its continuation and from which a reaction mixture comprising a polyamide, its oligomers or mixtures thereof is discharged at its other end.

26. (Previously Presented) The process of claim 22, comprising the following stages:

(1) reacting aminonitriles or dinitriles and diamines or mixtures thereof, optionally together with further polyamide-forming monomers and/or oligomers with said aqueous medium in said reactor at a temperature of from 180 to 310 °C and a pressure of from 1 to 10×10^6 Pa to obtain a reaction mixture,

(2) further reacting said reaction mixture at a temperature of from 200 to 300 °C and a pressure which is lower than the stage 1 pressure, wherein said temperature and said pressure are chosen such that a first gas phase and a first liquid phase are obtained and said first gas phase is separated from said first liquid phase,

(3) admixing said first liquid phase with a gaseous or liquid phase comprising water or an aqueous medium at a temperature of from 200 to 300 °C and a pressure of from 0.1 to 30×10^6 Pa to obtain a product mixture.

27. (Currently Amended) The process of claim 26, additionally comprising the following stage ~~or comprising the following stage in lieu of stage (3)~~:

(4) postcondensing the product mixture at a temperature from 200 to 280°C and a pressure which is lower than the stage 3 pressure, if stage 3 is carried out, wherein the temperature and the pressure are chosen such that a second gaseous phase, which comprises water and ammonia, and a second liquid phase, which comprises the polyamide, are obtained.

28. (Currently Amended) The process of claim 26, wherein a metal oxide catalyst in the form of a fixed bed ~~in the reactor or~~ is utilized in stage 1 or in stage 3 ~~or not only in the reactor or stage 1 but also in~~ or in both stage 1 and stage 3.

29. (Currently Amended) The process of claim 24 ~~that utilizes a reactor having a vertically disposed longitudinal axis wherein, in the reactor~~, wherein the reaction product is removed from the bottom and ammonia formed and any further low molecular weight compounds formed and water are taken off overhead, wherein the reactor

- comprises at least two chambers arranged above one another in the longitudinal direction, wherein
- the chambers are separated from one another by liquid-tight bottom plates,
- every chamber is connected via a liquid overflow to the immediately underlying chamber and a liquid product stream is taken off via the liquid overflow of the bottommost chamber,
- the gas space above the liquid surface in every chamber is connected to the chamber located immediately above it by one or more guide tubes which opens, or which each open, into a gas distributor having openings for the exit of gas below the liquid surface,
- and is also provided with at least one guide plate which is arranged vertically around each gas distributor and whose upper end is below the liquid surface and

whose lower end is above the liquid-tight bottom plate of the chamber and which divides each chamber into one or more spaces into which gas flows and one or more spaces into which gas does not flow.

30. (Previously Presented) The process of claim 22, wherein at least 50 % by weight of the solids are lactams and cyclic oligomeric lactams having two to six ring members that are derived from the aminonitrile used.

31. (Previously Presented) The process of claim 22, wherein aqueous medium only is introduced into the reactor at the at least two different locations.

32. (New) The process of claim 22, wherein a metal oxide catalyst in the form of a fixed bed is utilized in the reactor.

33. (New) The process of claim 22, comprising the following stages:

(1) reacting aminonitriles or dinitriles and diamines or mixtures thereof, optionally together with further polyamide-forming monomers and/or oligomers with said aqueous medium in said reactor at a temperature of from 180 to 310 °C and a pressure of from 1 to 10×10^6 Pa to obtain a reaction mixture,

(2) further reacting said reaction mixture at a temperature of from 200 to 300 °C and a pressure which is lower than the stage 1 pressure, wherein said temperature and said pressure are chosen such that a first gas phase and a first liquid phase are obtained and said first gas phase is separated from said first liquid phase,

(3) postcondensing said first liquid phase at a temperature from 200 to 280 °C and at a pressure, wherein the temperature and the pressure are chosen such that a second gaseous phase, which comprises water and ammonia, and a second liquid phase, which comprises the polyamide, are obtained.